

Official

IN THE CLAIMS

Please cancel claims 11, 13, 18, and 26-27, and amend claims 1-10, 12, 14-17, and 21 as follows:

1. (Amended) A method for managing channel assignment in a wireless communication system having a predetermined frequency band for use in establishing communication connections, said method comprising the steps of:

dividing the predetermined frequency band into a plurality of frequency sub-bands;

implementing a multiple access scheme within each of said plurality of frequency sub-bands;

specifying a power range for each of said plurality of frequency sub-bands, said power range representing a range of signal powers that are to be supported by one of a plurality of channels within each of said plurality of frequency sub-bands, wherein at least two of said plurality of frequency sub-bands are assigned power ranges that are different from one another;

ascertaining a power level associated with a first communication connection in the wireless communication system;

identifying at least one of said plurality of frequency sub-bands that has a power range encompassing said power level; and

assigning a channel within said at least one of said plurality of frequency sub-bands that has said power range encompassing said power level to said first communication connection.

2. (Amended) The method claimed in claim 1, wherein:

said plurality of frequency sub-bands includes a first frequency sub-band having a plurality of code division multiple access (CDMA) channels.

3. (Amended) The method claimed in claim 1, wherein:
said plurality of frequency sub-bands includes a first frequency sub-band having a plurality of time division multiple access (TDMA) channels.

4. (Amended) The method claimed in claim 1, wherein:
said step of ascertaining a power level includes measuring a power level of a signal received via said first communication connection.

5. (Amended) The method claimed in claim 1, wherein:
said step of ascertaining a power level includes determining a transmit power level required to communicate with a remote entity via said first communication connection.

6. (Amended) The method claimed in claim 1, wherein:
said wireless communication system includes a satellite communication system, wherein said predetermined frequency bandwidth represents a bandwidth available for communication between a satellite and a plurality of terrestrial users.

7. (Amended) A system for providing wireless communication between a communication platform and a plurality of subscribers, said system comprising:

a predetermined frequency band for providing said wireless communication, said predetermined frequency band being divided into a plurality of frequency sub-bands that are each capable of supporting a plurality of communication channels;

means for specifying a power range for each of said plurality of frequency sub-bands, said power range representing a range of signal powers that are to be supported by one of a plurality of channels within each of said plurality of frequency sub-bands;

means for determining a power level associated with a wireless connection between said communication platform and one of the plurality of subscribers;

means for selecting at least one of said plurality of frequency sub-bands that has a power range encompassing said power level determined by said means for determining; and

means for assigning a channel within said at least one of said plurality of frequency sub-bands that has said power range encompassing said power level determined by said means for determining to said wireless connection for use in providing wireless communication between said communication platform and said one of said plurality of subscribers.

8. (Amended) The system claimed in claim 7, wherein:

said plurality of frequency sub-bands includes a first frequency sub-band having a plurality of code division multiple access (CDMA) channels.

9. (Amended) The system claimed in claim 7, wherein:

said plurality of frequency sub-bands includes a first frequency sub-band having a plurality of time division multiple access (TDMA) channels.

10. (Amended) The system claimed in claim 7, further comprising:

means for monitoring said wireless connection to determine whether a power condition has changed during said wireless connection; and

means for assigning a new channel within a different frequency sub-band to said wireless connection when said means for monitoring determines that said power condition has changed.

12. (Amended) A method for providing multiple access communications between a first location and a second location, said method comprising the steps of:

providing a predetermined frequency band for use in establishing communication connections between said first location and said second location;

segmenting said predetermined frequency band into a plurality of frequency sub-bands;

providing a multiple access scheme within each of said plurality of frequency sub-bands;

specifying a power range for each of said plurality of frequency sub-bands, said power range representing a range of signal powers that are to be supported by one of a plurality of channels within each of said plurality of frequency sub-bands; and

limiting communication within each of the plurality of frequency sub-bands to signals having a power level within said power range.

14. (Amended) The method claimed in claim 12, wherein:

said limiting step includes determining said power level associated with a first communication connection and selecting one of said plurality of frequency sub-bands from said plurality of frequency sub-bands for use by said first communication connection based on said power level.

15. (Amended) The method claimed in claim 14, wherein:
said limiting step includes assigning a CDMA channel within said one of said plurality of frequency sub-bands to said first communication connection.

16. (Amended) The method claimed in claim 12, wherein:
said step of segmenting said predetermined frequency band into a plurality of frequency sub-bands includes defining a plurality of receive frequency sub-bands.

17. (Amended) The method claimed in claim 12, wherein:
said step of segmenting said predetermined frequency band into a plurality of frequency sub-bands includes defining a plurality of transmit frequency sub-bands.

19. The method claimed in claim 12, wherein:
said first location includes a multi-channel communications satellite orbiting about a primary body.

20. The method claimed in claim 19, wherein:
said second location includes a footprint region on said primary body associated with said multi-channel communications satellite.

21. (Amended) A method for providing multiple access communications between a first location and a second location, said method comprising the steps of:

providing a predetermined frequency band for use in establishing communication connections between said first location and said second location;

dividing said predetermined frequency band into a plurality of independent communication channels using at least two different multiple access methods;

separating said plurality of independent communication channels into a plurality of channel groups;

specifying a power range for each of said plurality of channel groups, said power range representing a range of signal powers that are to be supported by one of a plurality of channels within each of said plurality of channel groups; and

limiting communication within each of the plurality of channel groups to signals having a power level within said power range.

22. The method claimed in claim 21, wherein:

said at least two different multiple access methods includes frequency division multiple access (FDMA) and code division multiple access (CDMA).

23. The method claimed in claim 21, wherein:

said at least two different multiple access methods includes frequency division multiple access (FDMA) and time division multiple access (TDMA).

24. The method claimed in claim 21, wherein:

said at least two different multiple access methods includes time division multiple access (TDMA) and code division multiple access (CDMA).

25. The method claimed in claim 21, wherein:

said at least two different multiple access methods includes frequency division multiple access (FDMA), time division multiple access (TDMA), and code division multiple access (CDMA).

REMARKS

In the Office Action mailed on April 25, 2002 by the United States Patent and Trademark Office, the Examiner rejected claims 1-27. By way of this Amendment and Response, the Applicants have cancelled claims 11, 13, 18, and 26-27, and amended claims 1-10, 12, 14-17, and 21. Therefore, claims 1-10, 12, 14-17, and 19-25 are currently pending in the above-identified patent application. The foregoing amendments and the following remarks are believed to be fully responsive to the Office Action mailed April 25, 2002 and also render all currently pending claims at issue patentably distinct over the references of record.

I. REJECTIONS UNDER 36 U.S.C. 102(b)

The Examiner rejected claims 1-27 as being anticipated by U.S. Patent No. 5,749,044 as issued on May 5, 1998 to Natarajan et al (hereinafter referred to as the "Natarajan Reference"). Applicants respectfully traverse these rejections.

Generally, the Natarajan Reference discloses methods and apparatus for determining the best cell for servicing an existing channel request. The best cell is determined based upon an evaluation of at least four criteria for each of the candidate cells. One criteria that is used to determine the best cell is a candidate cell's broadcast power received at the subscriber unit.

In contrast to the teachings of the Natarajan Reference, power ranges are specified for each of the sub-bands. Once a connection is established in the system, the system

determines a power level associated with the connection, and then assigns a channel to the connection with a sub-band having a power range that encompasses the power level. Thus, each sub-band carries communications having similar power levels and communications capacity within each sub-band.

In view of the foregoing, and contrary to the Examiner's position that all elements of the claimed invention are disclosed in the Natarajan Reference, it is respectfully submitted that the claims contain language that clearly distinguish the present invention from the Natarajan Reference. For example, the Natarajan Reference does not disclose "specifying a power range for each of said plurality of frequency sub-bands/channel groups," with the "power range representing a range of signal powers that are to be supported by one of a plurality of channels within each of said plurality of frequency sub-bands/channel groups," as set forth in independent claims 1, 7, 13, and 21. In addition, the Natarajan Reference does not disclose selecting or identifying "at least one of the plurality of frequency sub-bands that has a power range encompassing said power level," as set forth in independent claims 1 and 7. Furthermore, the Natarajan Reference does not disclose "limiting communication within each of the plurality of frequency sub-bands/channels groups to signals having a power level within said power range," as recited in independent claims 13 and 21. Therefore, the rejections are unsupported by the references of record, and the Applicants respectfully request withdrawal of the rejection under 35 U.S.C. 102(b).

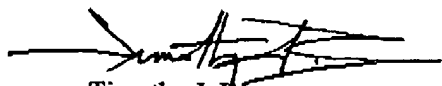
II. CONCLUSION

It is respectfully submitted that the above-identified application is in condition for allowance and such allowance is therefore earnestly requested by the Applicants. Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the undersigned at (480) 385-5060.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 13-4771 for any fee which may be due.

Respectfully submitted,

Dated 07/24/02
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